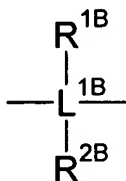


## AMENDMENTS TO THE CLAIMS

1. (currently amended) A monocyclopentadienyl complex which comprises the structural feature of the formula  $(\text{Cp})(-\text{Z}-\text{A})_m\text{M}$  (I), where the variables have the following meanings:

Cp is a cyclopentadienyl system,

Z is a bridge between A and Cp of the formula,



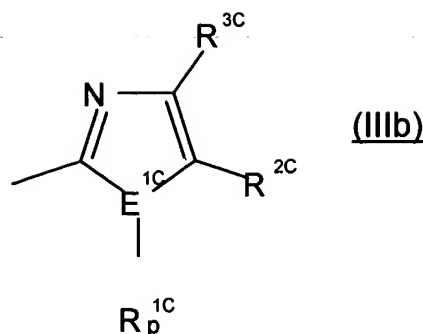
where

$\text{L}^{1\text{B}}$  are each, independently of one another, carbon or silicon,

$\text{R}^{1\text{B}}, \text{R}^{2\text{B}}$  are each, independently of one another hydrogen,  $\text{C}_1\text{-C}_{20}$ -alkyl,  $\text{C}_2\text{-C}_{20}$ -alkenyl,  $\text{C}_6\text{-C}_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or  $\text{SiR}^{3\text{B}}_3$ , where the organic radicals  $\text{R}^{1\text{B}}$  and  $\text{R}^{2\text{B}}$  may ~~also~~ be substituted by halogens, and the two radicals  $\text{R}^{1\text{B}}$  and  $\text{R}^{2\text{B}}$  ~~and/or, or either~~  $\text{R}^{1\text{B}}$  or  $\text{R}^{2\text{B}}$  and A may ~~also~~ be joined to form a five- or six- membered ring,

$\text{R}^{3\text{B}}$  are each, independently of one another, hydrogen,  $\text{C}_1\text{-C}_{20}$ -alkyl,  $\text{C}_2\text{-C}_{20}$ -alkenyl,  $\text{C}_6\text{-C}_{20}$ -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals  $\text{R}^{3\text{B}}$  may ~~also~~ be joined to form a five- or six-membered ring,

A ~~is an unsubstituted, substituted or fused, five-membered heteroaromatic ring system, has the formula (IIIb):~~



where

$E^{1C}$  is nitrogen, phosphorus, sulfur or oxygen,

$R^{1C}-R^{4C}$  are each, independently of one another, hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or  $SiR^{5C}_3$ , where the organic radicals  $R^{1C}-R^{4C}$  may be substituted by halogens or nitrogen or further  $C_1-C_{20}$ -alkyl groups,  $C_2-C_{20}$ -alkenyl groups,  $C_6-C_{20}$ -aryl groups, alkylaryl groups having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or  $SiR^{5C}_3$  and two vicinal radicals  $R^{1C}-R^{4C}$  or the two radicals  $R^{1C}$  or  $R^{4C}$  and Z may be joined to form a five- or six-membered ring,

$R^{5C}$  are each, independently of one another, hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals  $R^{5C}$  may be joined to form a five- or six-membered ring, and

p is 0 when  $E^{1C}$  is sulfur or oxygen and 1 when  $E^{1C}$  is nitrogen or phosphorus,

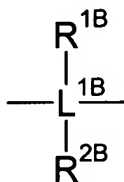
M is a metal selected from the group consisting of titanium in the oxidation state 3, vanadium, chromium, molybdenum and tungsten, and

m is 1, 2 or 3.

2. (currently amended) A monocyclopentadienyl complex as claimed in claim 1 having the formula (Cp)-(-Z-A)<sub>m</sub>MX<sub>k</sub> (VI), where the variables have the following meanings:

Cp is a cyclopentadienyl system,

Z is a bridge between A and Cp of the formula,



where

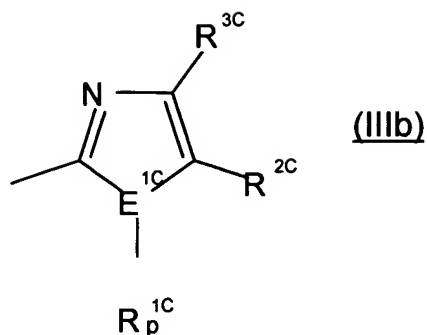
L<sup>1B</sup> are each, independently of one another, carbon or silicon,

R<sup>1B</sup>, R<sup>2B</sup> are each, independently of one another hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>2</sub>-C<sub>20</sub>-alkenyl, C<sub>6</sub>-C<sub>20</sub>-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or SiR<sup>3B</sup><sub>3</sub>, where the organic radicals R<sup>1B</sup> and R<sup>2B</sup> may ~~also~~ be substituted by halogens, and the two radicals R<sup>1B</sup> and R<sup>2B</sup> ~~and/or, or either~~ R<sup>1B</sup> or R<sup>2B</sup> and A may ~~also~~ be joined to form a five- or six-membered ring,

R<sup>3B</sup> are each, independently of one another, hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>2</sub>-C<sub>20</sub>-alkenyl, C<sub>6</sub>-C<sub>20</sub>-aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals R<sup>3B</sup> may ~~also~~ be joined to form a five- or six-membered ring,

A ~~is an unsubstituted, substituted or fused, five-membered heteroaromatic ring system,~~

has the formula (IIIb):



where

$E^{1C}$  is nitrogen, phosphorus, sulfur or oxygen,

$R^{1C}-R^{4C}$  are each, independently of one another, hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or  $SiR^{5C}_3$ , where the organic radicals  $R^{1C}-R^{4C}$  may be substituted by halogens or nitrogen or further  $C_1-C_{20}$ -alkyl groups,  $C_2-C_{20}$ -alkenyl groups,  $C_6-C_{20}$ -aryl groups, alkylaryl groups having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or  $SiR^{5C}_3$  and two vicinal radicals  $R^{1C}-R^{4C}$  or the two radicals  $R^{1C}$  or  $R^{4C}$  and Z may be joined to form a five- or six-membered ring,

$R^{5C}$  are each, independently of one another, hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals  $R^{5C}$  may be joined to form a five- or six-membered ring, and

p is 0 when  $E^{1C}$  is sulfur or oxygen and 1 when  $E^{1C}$  is nitrogen or phosphorus,

M is a metal selected from the group consisting of titanium in the oxidation state 3, vanadium, chromium, molybdenum and tungsten,

m is 1, 2 or 3,

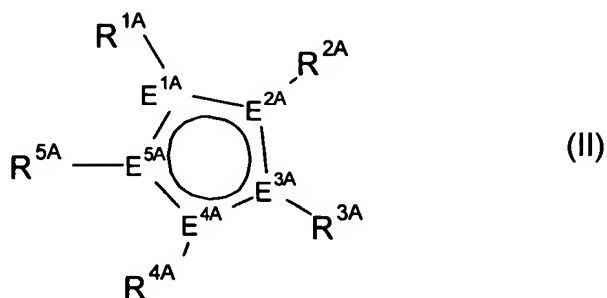
X are each, independently of one another, fluorine, chlorine, bromine, iodine, hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl, C<sub>2</sub>-C<sub>10</sub>-alkenyl, C<sub>6</sub>-C<sub>20</sub>-aryl, alkylaryl having 1-10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part, NR<sup>1</sup>R<sup>2</sup>, OR<sup>1</sup>, SR<sup>1</sup>, SO<sub>3</sub>R<sup>1</sup>, OC(O)R<sup>1</sup>, CN, SCN, β-diketonate, CO, BF<sub>4</sub><sup>-</sup>, PF<sub>6</sub><sup>-</sup> or a bulky noncoordinating anion,

R<sup>1</sup>-R<sup>2</sup> are each, independently of one another, hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>2</sub>-C<sub>20</sub>-alkenyl, C<sub>6</sub>-C<sub>20</sub>-aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or SiR<sup>3</sup><sub>3</sub>, where the organic radicals R<sup>1</sup>-R<sup>2</sup> may also be substituted by halogens and two radicals R<sup>1</sup>-R<sup>2</sup> may also be joined to form a five- or six-membered ring,

R<sup>3</sup> are each, independently of one another, hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>2</sub>-C<sub>20</sub>-alkenyl, C<sub>6</sub>-C<sub>20</sub>-aryl, or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals R<sup>3</sup> may also be joined to form a five- or six-membered ring and

k is 1, 2, or 3.

3. (currently amended) The monocyclopentadienyl complex of claim 1, wherein the cyclopentadienyl system Cp has the formula (II):



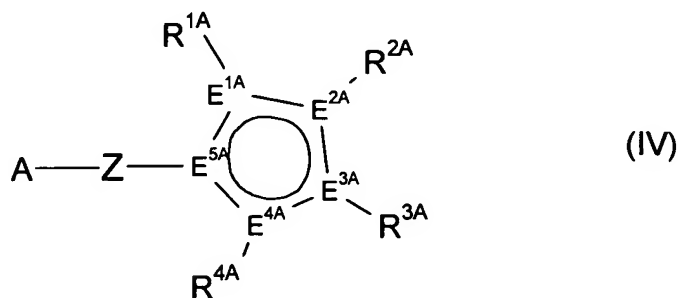
where the variables have the following meanings:

$E^{1A}-E^{5A}$  are each carbon or not more than one  $E^{1A}$  to  $E^{5A}$  is phosphorus,

$R^{1A}-R^{5A}$  are each, independently of one another, hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part,  $NR^{6A}_2$ ,  $N(SiR^{6A}_3)_2$ ,  $OR^{6A}$ ,  $OSiR^{6A}_3$ ,  $SiR^{6A}_3$ , or  $BR^{6A}_2$ , where the organic radicals  $R^{1A}-R^{5A}$  may ~~also~~ be substituted by halogens, and two vicinal radicals  $R^{1A}-R^{5A}$  may ~~also~~ be joined to form a five- or six-membered ring, and/or two vicinal radicals  $R^{1A}-R^{5A}$  are joined to form a heterocycle which contains at least one atom from the group consisting of N, P, O and S, with 1, 2 or 3 substituents  $R^{1A}-R^{5A}$  each being a -Z-A group, and

$R^{6A}$  are each, independently of one another, hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl, or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two geminal radicals  $R^{6A}$  may ~~also~~ be joined to form a five- or six-membered ring.

4. (currently amended) The monocyclopentadienyl complex of claim 1, wherein the cyclopentadienyl system Cp together with -Z-A has the formula (IV):



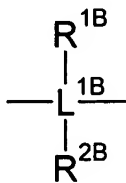
where the variables have the following meanings:

$E^{1A}-E^{5A}$  are each carbon or not more than one  $E^{1A}$  to  $E^{5A}$  is phosphorus,

$R^{1A}-R^{4A}$  are each, independently of one another, hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part,  $NR^{6A}_2$ ,  $N(SiR^{6A}_3)_2$ ,  $OR^{6A}$ ,  $OSiR^{6A}_3$ , or  $SiR^{6A}_3$ , where the organic radicals  $R^{1A}-R^{4A}$  may also be substituted by halogens, and two vicinal radicals  $R^{1A}-R^{4A}$  may also be joined to form a five- or six-membered ring, and/or two vicinal radicals  $R^{1A}-R^{4A}$  are joined to form a heterocycle which contains at least one atom from the group consisting of N, P, O and S,

$R^{6A}$  are each, independently of one another, hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl, or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two geminal radicals  $R^{6A}$  may also be joined to form a five- or six-membered ring,

Z is a bridge between A and Cp of the formula,



where

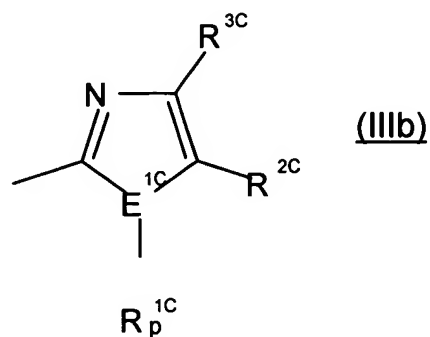
$L^{1B}$  are each, independently of one another, carbon or silicon,

$R^{1B}, R^{2B}$  are each, independently of one another hydrogen,  $C_1-C_{20}$ -alkyl,  $C_2-C_{20}$ -alkenyl,  $C_6-C_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or  $SiR^{3B}_3$ , where the organic radicals  $R^{1B}$  and  $R^{2B}$  may also be substituted by halogens, and the

two radicals  $R^{1B}$  and  $R^{2B}$  ~~and/or, or either~~  $R^{1B}$  or  $R^{2B}$  and A may also be joined to form a five- or six-membered ring,

$R^{3B}$  are each, independently of one another, hydrogen,  $C_1$ - $C_{20}$ -alkyl,  $C_2$ - $C_{20}$ -alkenyl,  $C_6$ - $C_{20}$ -aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals  $R^{3B}$  may also be joined to form a five- or six-membered ring and

A ~~is an unsubstituted, substituted or fused, five-membered heteroaromatic ring system~~  
has the formula (IIIb):



where

$E^{1C}$  is nitrogen, phosphorus, sulfur or oxygen,

$R^{1C}$ - $R^{4C}$  are each, independently of one another, hydrogen,  $C_1$ - $C_{20}$ -alkyl,  $C_2$ - $C_{20}$ -alkenyl,  $C_6$ - $C_{20}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or  $SiR^{5C}_3$ , where the organic radicals  $R^{1C}$ - $R^{4C}$  may be substituted by halogens or nitrogen or further  $C_1$ - $C_{20}$ -alkyl groups,  $C_2$ - $C_{20}$ -alkenyl groups,  $C_6$ - $C_{20}$ -aryl groups, alkylaryl groups having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part or  $SiR^{5C}_3$  and two vicinal radicals  $R^{1C}$ - $R^{4C}$  or the two radicals  $R^{1C}$  or  $R^{4C}$  and Z may be joined to form a five- or six-membered ring,



R<sup>5C</sup> are each, independently of one another, hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, C<sub>2</sub>-C<sub>20</sub>-alkenyl, C<sub>6</sub>-C<sub>20</sub>-aryl or alkylaryl having from 1 to 10 carbon atoms in the alkyl part and 6-20 carbon atoms in the aryl part and two radicals R<sup>5C</sup> may be joined to form a five- or six-membered ring, and

p is 0 when E<sup>1C</sup> is sulfur or oxygen and 1 when E<sup>1C</sup> is nitrogen or phosphorus.

5. (canceled)
6. (previously presented) The monocyclopentadienyl complex of claim 1, wherein L<sup>1B</sup> is carbon.
7. (previously presented) The monocyclopentadienyl complex of claim 1, wherein Z is -CH<sub>2</sub>-, -C(CH<sub>3</sub>)<sub>2</sub>-, -CH(C<sub>6</sub>H<sub>5</sub>)- or -C(C<sub>6</sub>H<sub>5</sub>)<sub>2</sub>-.
8. (previously presented) A catalyst system for olefin polymerization comprising
  - A) at least one monocyclopentadienyl complex as defined in claim 1,
  - B) optionally an organic or inorganic support,
  - C) optionally one or more activating compounds,
  - D) optionally one or more catalysts suitable for olefin polymerization and
  - E) optionally one or more metal compounds containing a metal of group 1, 2 or 13 of the Periodic Table.

9. (original) A prepolymerized catalyst system comprising a catalyst system as claimed in claim 8 and one or more linear C<sub>2</sub>-C<sub>10</sub>-1-alkenes polymerized onto it in a mass ratio of from 1:0.1 to 1:1 000, based on the catalyst system.
10. (previously presented) The use of a catalyst system as claimed in claim 8 for the polymerization or copolymerization of olefins.
11. (previously presented) A process for preparing polyolefins by polymerization or copolymerization of olefins in the presence of a catalyst system as claimed in claim 8.
12. (canceled)
13. (canceled) .